

**REMARKS**

Claims 1-30 are pending in the present application. Claims 23-30 are added. Support for the additional claims may be found at least on pages 14-15 of the current specification. Reconsideration of the claims is respectfully requested.

**I. 35 U.S.C. § 102, Alleged Anticipation, Claims 1-22**

The Office Action rejects claims 1-22 under 35 U.S.C. § 102(b) as being allegedly anticipated by Squibb (U.S. Patent No. 6,158,019). This rejection is respectfully traversed.

As to claims 1 and 12, the Office Action states:

Squibb discloses the invention as claimed including a data management appliance comprising a random-access-memory (e.g. see column 3, lines 44 et seq.); control circuit for receiving commands from a host is taught to be extent that it is being claimed since both read and write are received and controlled from host computer 3 (e.g. see figure 1A); in response to the control circuit receiving a write command from the computer, the control circuit updates the random-access storage unit to include information associated with the write command (e.g. see column 2, lines 10 et seq.); and in response to a read command including a logical address and a time value, the control circuit retrieves data representing contents of the logical address at a time represented by time value (e.g. see figure 4A; column 10, line 65 bridging column 11, line 1).

Office Action dated January 2, 2004, pages 2-3.

Claim 1, which is representative of the other rejected independent claim 12 with regard to similarly recited subject matter, reads as follows:

1. A data management appliance, comprising:  
a random-access storage unit; and  
control circuitry adapted to receive commands from a host computer system,  
wherein in response to the control circuitry receiving a write command from the computer system, the control circuitry updates the random-access storage unit to include information associated with the write command and  
in response to a read command including a logical address and a time value, the control circuitry retrieves, from the random-access storage

unit, data representing contents of the logical address at a time represented by time value.

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). All limitations of the claimed invention must be considered when determining patentability. *In re Lowry*, 32 F.3d 1579, 1582, 32 U.S.P.Q.2d 1031, 1034 (Fed. Cir. 1994). Anticipation focuses on whether a claim reads on the product or process a prior art reference discloses, not on what the reference broadly teaches. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 U.S.P.Q. 781 (Fed. Cir. 1983). Applicant respectfully submits that Squibb does not identically show each and every feature of the claims arranged as they are in the claims. Specifically, Squibb does not teach in response to a read command including a logical address and a time value, the control circuitry retrieves, from the random-access storage unit, data representing contents of the logical address at a time represented by time value, as recited in claim 1.

Squibb is directed to a method and apparatus for restoring an updated computer storage system from a journal of write events. Squibb describes a process whereby events in an event journal may be used to create an event map and "delta" data structure, which may be merged with an original file stored on streaming media to generate a previous version of a file.

While the system of Squibb may receive a read request, the request does not include a logical address and a time value. The Office Action alleges that this feature is taught at column 10, line 65, to column 11, line 1, which reads as follows:

FIG. 4A illustrates exemplary components of the present invention that participate in fulfilling a read request 31) for an updated storage, an original storage 6, an event journal 21 and an event map 29.

In this section, Squibb merely teaches fulfilling a read request for an updated storage, an original storage, an event journal and an event map. Furthermore, Squibb specifically teaches that:

A read request is composed, for example, of two elements: a data position; and a read size. The data position gives, for example, the starting

address relative to an origin of the data to be read. The read size gives, for example, the count of elemental units to be obtained from the storage. The sum of the data position and the read size gives the address of the ending read address.

(Column 11, lines 4-11.)

There is nothing in the cited section, or any other section of Squibb, that teaches that a read command would contain a logical address and a time value, and that in response to the read command, the control circuitry retrieves, from the random-access storage unit, data representing contents of the logical address at a time represented by time value.

Thus, Squibb does not teach each and every feature of independent claims 1 and 12 as required under 35 U.S.C. § 102. At least by virtue of their dependency on independent claims 1 and 12, respectively, Squibb does not teach each and every feature of dependent claims 2-11 and 13-22. Accordingly, Applicant respectfully requests withdrawal of the rejection of claims 1-22 under 35 U.S.C. § 102.

Furthermore, Squibb does not teach, suggest, or give any incentive to make the needed changes to reach the presently claimed invention. In fact, Squibb does not even recognize the need to retrieve data representing contents of the logical address at a time represented by time value using the control circuitry, from the random-access storage unit, in response to a read command including a logical address and a time value. Absent the Examiner pointing out some teaching or incentive to implement Squibb to retrieve data representing contents of the logical address at a time represented by time value using the control circuitry, from the random-access storage unit, in response to a read command including a logical address and a time value, one of ordinary skill in the art would not be led to modify Squibb to reach the present invention when the reference is examined as a whole. Absent some teaching, suggestion, or incentive to modify Squibb in this manner, the presently claimed invention can be reached only through an improper use of hindsight using the Applicants' disclosure as a template to make the necessary changes to reach the claimed invention.

Moreover, in addition to their dependency on claims 1 and 12, respectively, Squibb does not teach the specific features recited in independent claims 2-11 and 13-22. As an example, with regard to claims 3 and 14, Squibb does not teach where the write commands are received from the computer system through a replicating controller. The

Office Action alleges that this feature is taught at column 4, lines 56-57, which reads as follows:

It is a further object of the present invention to provide data protection including backup and archive services in a client/server environment.

This section of Squibb merely teaches the use of backup and archive services. The cited section of Squibb does not teach a replicating controller, which is a hardware disk controller that controls primary storage, but has the additional feature of replicating storage commands submitted to primary storage and providing the replicated commands to the data management appliance, which replicates the data contained on primary storage on random-access storage (see current specification, page 12, lines 14-20).

Therefore, in addition to being dependent on independent claims 1 and 12, respectively, dependent claims 2-11 and 13-22 are also distinguishable over Squibb by virtue of the specific features recited in these claims. Accordingly, Applicant respectfully requests withdrawal of the rejection of claims 2-11 and 13-22 under 35 U.S.C. § 102(b).

## II. New Claims

Claims 23-30 have been added to the pending application. The features in these claims are supported in the specification at least on pages 14-15. Consequently, no new matter has been added.

Claim 23, which is representative of the other newly added dependent claim 27, reads as follows:

23. The data management appliance of claim 5, wherein commands stored in the forward journal are combined to obtain a net change.

At least by virtue of their dependency on claims 5 and 16, which in turn are dependent on independent claims 1 and 12, respectively, Squibb does not teach each and every feature of dependent claims 23 and 27. Furthermore, Squibb does not teach wherein commands stored in the forward journal are combined to obtain a net change. As discussed above, Squibb does not teach in response to a read command including a logical address and a time value, the control circuitry retrieves, from the random-access storage unit, data

representing contents of the logical address at a time represented by time value, thus, Squibb does not teach in response to a read command including a logical address and a time value, the control circuitry retrieves, from the random-access storage unit, data representing contents of the logical address at a time represented by time value, wherein the random-access storage unit stores a forward journal and wherein commands stored in the forward journal are combined to obtain a net change.

Claims 24 and 26, which are representative of the other newly added dependent claims 28 and 30, reads as follows:

24. The data management appliance of claim 23, wherein starting address and lengths associated with the net change are used to derive an inverse of the net change.

26. The data management appliance of claim 23, wherein a mirror-in-the-middle is updated to reflect the net change.

At least by virtue of their dependency on claims 23 and 27, which in turn are dependent on claims 5 and 16, respectively, Squibb does not teach each and every feature of dependent claims 24, 26, 28 and 30. Furthermore, Squibb does not teach wherein starting address and lengths associated with the net change are used to derive an inverse of the net change and wherein a mirror-in-the-middle is updated to reflect the net change. As discussed above, Squibb does not teach wherein the random-access storage unit stores a forward journal and wherein commands stored in the forward journal are combined to obtain a net change, thus, Squibb does not teach wherein the random-access storage unit stores a forward journal, wherein commands stored in the forward journal are combined to obtain a net change, wherein starting address and lengths associated with the net change are used to derive an inverse of the net change and wherein a mirror-in-the-middle is updated to reflect the net change.

Claim 25, which is representative of the other newly added dependent claim 29, reads as follows:

25. The data management appliance of claim 24, wherein the inverse of the net change is recorded as a snapshot in a backward journal.

At least by virtue of their dependency on claims 24 and 28, which in turn are dependent on claims 23 and 27, respectively, Squibb does not teach each and every feature of

dependent claims 25 and 29. Furthermore, Squibb does not teach wherein the inverse of the net change is recorded as a snapshot in a backward journal. As discussed above, Squibb does not teach wherein commands stored in the forward journal are combined to obtain a net change and wherein starting address and lengths associated with the net change are used to derive an inverse of the net change, thus, Squibb does not teach wherein commands stored in the forward journal are combined to obtain a net change, wherein starting address and lengths associated with the net change are used to derive an inverse of the net change and wherein the inverse of the net change is recorded as a snapshot in a backward journal.

Thus, in view of the above, Applicants respectfully submit that Squibb does not teach each and every feature dependent claims 23-30. Accordingly, new claims 23-30 should be allowed.

### III. Conclusion

It is respectfully urged that the subject application is patentable over the prior art of record and is now in condition for allowance. The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

Respectfully submitted,

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